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### AFRICAN ORCHIDS. XII

BY

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OWING TO the war situation it has not been found possible to publish this paper in the *Kew Bulletin*, in which the earlier numbers of this series have appeared.\* Professor Oakes Ames, however, has kindly allowed me to continue the series in the *Botanical Museum Leaflets*. The present paper deals with the genera *Habenaria* and *Polystachya*, both of which I have been studying monographically for some years. It includes several new species from the very fine collection made by my colleague, Mr. E. Milne-Redhead, in Northern Rhodesia and Angola. The type specimens of all the new species are in the Kew Herbarium.

***Habenaria* (§. *Chlorinae*) *Eggelingii* *Summerhayes* sp. nov.;** species *H. tenuispicae* Rendle valde affinis, sed spica crassiore, floribus fere duplo majoribus, sepalis lateralibus et petalis angustioribus, calcaris antice (in parte apicali) magis dilatato distinguitur.

*Herba* perennis, erecta; tubera anguste ovoidea, 1–2 cm. longa, ut radices laxe tomentosa. *Caulis* erectus, ± robustus, spica inclusa usque ad 2 m. altus et 1 cm. diametro, fere glaber, e basi usque ad basin spicae ± foliatus.

\* Continued from Bull. Misc. Inform. Kew (1939).



*Folia* 7–12, 1–2 infima ad vaginas redacta, intermedia lanceolata vel lineari-lanceolata, acuta, usque ad 35 cm. longa et 2.5 cm. lata, superiora sensim decrescentia in bracteas abeuntia. *Spica* anguste cylindrica, usque ad 56 cm. longa, 1.5–2.5 cm. diametro, densiuscule multiflora; bracteae lanceolatae, acuminatae, inferiores flores superantes, superiores flores aequantes vel breviores. *Flores* suberecti, virides, sessiles vel subsessiles; ovarium 7–10 mm. longum. *Sepalum* intermedium elliptico-lanceolatum vel ovatum, acutum vel obtusum, valde concavum, 3.6–5.3 mm. longum, 1.9–3.4 mm. latum, uni-vel trinervium; sepala lateralia lanceolato-oblonga, subacuta, deflexa, 3.5–5.4 mm. longa, 1.3–2 mm. lata, uninervia; omnia sepala dorso juxta apicem breviter apiculata. *Petala* oblique triangulari-ovata, basi antice paulo dilatata, secus medium leviter carinata, 3.4–4.8 mm. longa, 1.8–3.3 mm. lata, saepius trinervia, cum sepalo intermedio agglutinata galeam ovatam vel suborbicularem formantia. *Labelium* subcarnosum, ambitu anguste flabellato-ligulatum, dimidio superiore (vel apicali) trilobatum, totum 4.2–6 mm. longum; lobus intermedius ligulatus, obtusus vel subacutus, 1.8–3 mm. longus, 0.6–1.4 mm. latus; lobi laterales leviter divergentes, lineari-ligulati, 0.7–2.3 mm. longi, 0.4–0.7 mm. lati; calcar dependens, basi cylindricum, dimidio apicali clavato-inflatum, 5–6.5 mm. longum, sub apice 0.7–1.2 mm. diametro. *Anthera* subreclinata, 1.2–1.3 mm. alta, loculis parallelis, canalibus nullis vel brevissimis; viscidia satis magna, orbicularia; staminodia distincta, transverse elliptica, leviter retusa, carnosia. *Brachia* stigmatifera subdeflexa, sursum  $\pm$  clavato-incrassata, apice applanata vel leviter concava,  $\pm$  tuberculata, 1–1.5 mm. longa; rostellii lobus intermedius brevissimus, globoso-dentiformis, lobi laterales ligulati, obtusi, 0.7 mm. longi, inferne brachiis stigmatiferis adnati.

UGANDA: Ruwenzori, Bajuku Valley, 3240 m., in Heather forest below 1st. valley step, Aug. 1933, *Eggeling 1286* (TYPE); Kigezi, Mt. Mgahinga, 3300 m., occasional in grassland, Aug. 1938, *Thomas 2469*; Mt. Elgon, 3000 m., local in Bamboo zone, Jan. 1918, *Dummer 3507*; same locality, 2700-3150 m., 1929, *Hancock & Soudy 104a*; Mt. Elgon, Bulambuli, 2700 m., in mud by stream, local, Sept. 1932, *Thomas 572*; same locality, 2850 m., among short grass beside small stream, May 1935, *Synge 1870*.

KENYA COLONY: Mt. Elgon, south side, 3240 m., on river bank in wooded and grassy country, Jan. 1937, *Tweedie 360*; same locality 3360 m., in grass along stream, Feb. 1935, *Taylor 3623*; Aberdare Mts., Naivasha-Nyeri track, 3240 m., in *Hagenia-Hypericum* forest, Oct. 1934, *Taylor 1390*; Mt. Kenya, north-west slopes, 3150 m., beside small stream in shade, mostly in fruit, April 1935, *Synge 1759*.

This species, which is evidently common at high altitudes on many of the mountains of East Africa, is a close relative of *H. tenuispica* Rendle with which it agrees in habit and in the general structure of the flower. Apart from the differences mentioned above in the diagnosis *H. Eggelingii* has, on the average, a greater proportion of the lip undivided than is the case in its ally.

**Habenaria filicornis** (*Thonn.*) *Lindley* Gen. & Sp. Orchid. (1835) 318.

*Habenaria Spiranthes* Reichenbach filius in Flora 48 (1865) 178.

*Habenaria deflexa* Hochstetter ex Kraenzlin in Engler Bot. Jahrb. 16 (1893) 146.

*Habenaria Erythraeae* Rolfe in Dyer Fl. Trop. Afr. 7 (1898) 215.

An examination of all these "species" reveals no essential differences between them and they must consequently be looked upon as conspecific. The species is distributed from Nigeria eastwards to Eritrea and southwards to Angola and Southern Rhodesia.

**Habenaria chlorotica** *Reichenbach filius* in Flora 48 (1865) 178.

*Habenaria natalensis* Reichenbach filius Otia Bot. Hamburg. (1881) 97.

The type specimens of these two species agree in all features. The distribution of the species is Northern Nigeria, Uganda, Kenya Colony, Angola, Northern Rhodesia, Transvaal and Natal. No doubt the gaps in this distribution, e.g. Tanganyika and Southern Rhodesia, will be filled as botanical exploration progresses.

*H. chlorotica* is very closely allied to *H. filicornis* and careful measurements and analysis of over forty gatherings have been necessary to convince me of their distinctness. The most obvious difference is in the leaves which are linear and about sixteen times as long as broad in the former, whereas in *H. filicornis* they are oblong or narrowly lanceolate and about five and one-half times as long as broad. In addition the plants are distinctly more robust in *H. chlorotica* with longer and more floriferous inflorescences. In the floral details differences are evident only on careful examination. In *H. chlorotica* the lobes of the lip are shorter, the stigmata are longer, and the middle lobe of the rostellum is longer with a very pronounced fleshy ridge at its base. This ridge is either absent or poorly developed in *H. filicornis*.

**Habenaria peristyloides** A. Richard in Ann. Sci. Nat. sér. 2, 14 (1840) 270, t. 17, fig. 3.

*Habenaria combusta* Ridley in Journ. Bot. 24 (1886) 294.

*Habenaria cardiochila* Kraenzlin in Engler Bot. Jahrb. 16 (1893) 144.

*Habenaria Rendlei* Rolfe in Dyer Fl. Trop. Afr. 7 (1898) 213.

*Roeperocharis ukingensis* Schlechter in Engler Bot. Jahrb. 53 (1915) 520.

Careful examination of the type specimens, figures and

descriptions of the above reveals no essential structural differences between them. There is considerable variation in habit, the type collection of *H. combusta* consisting of rather stunted specimens, while that of *H. Rendlei* includes very slender and narrow-leaved forms. All these, however, can be paralleled among material collected in Kenya Colony and Uganda and often two or more of the above "species" have been found mixed together. The petals vary a good deal in shape but often show great diversity on the same plant or indeed in the same flower! Throughout all the variations mentioned the general flower-structure remains unaltered, characteristic features being the trilobed lip with its large rounded basal auricles and recurved side-lobes, the club-shaped bordered stigmas adpressed to the lip-disk, and the large folded hooded rostellum standing in front of the contiguous anther-loculi. As I pointed out in a previous paper (Bull. Misc. Inform. Kew (1933) 251), *H. peristyloides* is quite different in column characters from the genus *Roeperocharis*, to which it bears a strong resemblance.

The distribution of the species is Abyssinia, Uganda, Kenya Colony, and southern Tanganyika Territory. It occurs in grass-lands between 5500 and 10,000 feet (1650-3000 metres) above sea level.

**Habenaria (§. Commelinifoliae) coeloglossoides**  
*Summerhayes sp. nov.*; affinis *H. obovatae* Summerhayes, a qua floribus majoribus, petalis late ovatis margine antico unidentatis, labelli ungue ac lobis lateralibus quam intermedio longioribus, calcari dimidio superiore nec apice tantum inflato, antherae canalibus ac pollinii caudiculis brachia stigmatifera superantibus, rostellii lobo intermedio majore differt.

*Herba* terrestris, tubera et radices non visa. *Caulis* erectus, racemo incluso 15-40 cm. altus (ad 60 cm. fide

collect.), laxiuscule 6–9-foliatus. *Folia* 1-2 infima  $\pm$  ad vaginas redacta, intermedia oblongo-vel lineari-lanceolata, acuta, apice breviter cuspidato-acuminata, usque ad 13 cm. longa et 1.7 cm. lata, superiora minora, bracteiformia. *Racemus* 5–11 cm. longus, fere 3 cm. diametro, laxiuscule 5–15-florus; bractea lanceolatae, acuminatae, usque ad 2.5 cm. longae et 8 mm. latae, inferiores flores aequantes vel paulo superantes. *Flores* adscendentes, luteo-virides; pedicellus cum ovario 1–1.7 cm. longus. *Sepalum* intermedium erectum, elliptico-ovatum, apice obtusum, leviter retusum, 7 mm. longum, 4.5 mm. latum; sepala lateralia deflexa, curvatim semi-ovata, subacuta, circiter 7.5 mm. longa et 3.5 mm. lata; omnia sepala breviter ciliolata. *Petala* oblique late ovata, margine antico supra medium breviter uni-dentata, 7 mm. longa, 5.5–6 mm. lata, superne paulo incrassata et atrata. *Labellum* dimidio inferiore ligulatum, indivisum, superne trilobatum; pars indivisa 6 mm. longa, 2.5 mm. lata; lobus intermedius ligulatus, apice rotundatus, 4 mm. longus, 1 mm. latus; lobi laterales superne divergentes, lineares, 9–10 mm. longi, 1 mm. lati; calcar dependens, inferne cylindricum, dimidio apicali valde inflatum, acutum, 10 mm. longum, 1.7 mm. diametro. *Anthera*  $\pm$  reclinata, connectivo lato haud alto, loculis valde separatis 1.5 mm. altis, canalibus porrectis gracilibus 2.5 mm. longis, staminodiis parvis ellipticis. *Brachia* stigmatifera apice applanato-clavato, juxta basin facie superiore appendice hemisphaerica papillosa instructa; rostellum lobus intermedius deltoideus, 1.5 mm. altus, lobi laterales lineares, oblique truncati, fere 2 mm. longi; ovarium curvatum, 9–10 mm. longum.

UGANDA: Virunga Mts., Muhavura, on lower slopes, 2550 m., in short turf on rock, *Eggeling 982* (TYPE).

An interesting species showing affinities with several groups. The sepals and petals are very similar to those in

*H. epipactidea* Reichb.f., but the column and lip structure is very different. Both this and *H. obovata* Summerh., which is clearly its closest ally, have some of the characters of the genus *Roeperocharis*, notably the broad anther connective. In *H. coeloglossoides*, indeed, there is a papillose cushion near the base of each stigmatic arm, which may be looked upon as a reduced form of the upper stigmatic appendage in *Roeperocharis*. The rostellum, however, is quite different from that in the latter genus, while there are quite long anther canals and corresponding caudicles, features which are lacking in true *Roeperocharis* species.

The specific epithet is given on account of the strong superficial resemblance to *Coeloglossum viride* (L.) Hartm., the British Frog Orchid.

**Habenaria gabonensis** Reichenbach filius var. **psiloceras** (Welw. ex Reichb.f.) Summerhayes comb. nov.

*Habenaria psiloceras* Welwitsch ex Reichenbach filius in Flora 50 (1867) 99.

In a previous note dealing with *H. gabonensis* (Bull. Misc. Inform. Kew (1938) 144) I considered *H. psiloceras* as conspecific. Since then I have seen material collected in eastern Angola by Mr. E. Milne-Redhead which agrees very closely with Welwitsch's original specimens. Both gatherings have spurs from 13–16 cm. in length, whereas those in all the specimens of *H. gabonensis* which I have seen never exceed 9 cm. In view of the identity in the other details of the floral structure it seems most suitable to consider *H. psiloceras* as a long-spurred variety of *H. gabonensis* and I am therefore treating it as such. The variety is restricted to Angola so far as is known at present. *H. gabonensis* occurs in the southern Cameroons, Gabon, Princes Island, and possibly also in Angola from which I have seen a plant, collected by

A. W. Exell and F. A. Mendonça, which has well-developed fruits and withered flowers and is apparently referable to this species.

**Habenaria** sectio **Trachypetalae** *Summerhayes*  
*sect. nov.*

Caulis erectus, foliatus; folia lanceolata vel elliptico-lanceolata usque ovata, sursum in bracteas abeuntia; flores mediocres (1.5–3 cm. diametro); petala simplicia vel usque ad infra medium bifida,  $\pm$  dense pilosa, cum sepalo intermedio agglutinata; labellum ex ungue satis longo trifidum, lobis linearibus intermedio quam laterali-bus paulo longiore vel distincte brevioribus, calcarum dependenti ovarium et pedicellum aequante, supra  $\pm$  inflato; anthera brevis, crassa, connectivo lato, canalibus satis longis, staminodiis parvis; stigmata mediocria, crassiuscula, sursum tantum paulo incrassata; rostellum magnum, antheram aequans vel superans, apice saepius  $\pm$  truncatum dentatum.

Species 3 adhuc notae, Africae tropicae indigenae.

Species typica sectionis:—*H. trachypetala* Kraenzlin.

I have created the above new section of *Habenaria* to contain several striking African species which cannot satisfactorily be placed in any of the sections recognised up to now. As the name indicates the striking feature in common is the possession of very hairy and often curiously shaped petals, which may be entire or divided to below the middle. Other correlated features are the vegetative characters; the structure of the lip, the anther, the stigmata and the rostellum middle-lobe. Until I have carried my researches on the genus *Habenaria* a good deal further, I am not prepared to make any comments on the relationship of the new section to any others at present recognised. The three species, one of which (*H. pubipetala* Summerhayes) is described below for the first time, may be distinguished as follows:



Petals entire but with very broad semi-orbicular base; anther canals twice as long as stigmas *H. trachypetala* Kraenzlin

Petals lobed, at least in the upper part; anther canals equalling or slightly exceeding the stigmas

Petals divided to below the middle; middle lobe of lip slightly longer than the side lobes; spur not spirally twisted; rostellum middle-lobe much overtopping the column, truncate at the apex *H. longirostris* Summerhayes

Petals divided irregularly in the upper part; middle lobe of lip much shorter than the side lobes; spur spirally twisted; rostellum middle-lobe equalling the anther, pointed at the apex *H. pubipetala* Summerhayes

Of the three species *H. longirostris* occurs in Northern Nigeria and Uganda, *H. trachypetala* in southern Tanganyika Territory and Nyasaland, while *H. pubipetala* is so far known only from Nyasaland.

**Habenaria trachypetala** *Kraenzlin* in Engler Bot. Jahrb. 30 (1901) 281.

*Habenaria rhombocorys* Schlechter in Engler Bot. Jahrb. 53 (1915) 501.

Comparison of the above indicates that they are conspecific. The flowers in *Goetze 817* (type of *H. trachypetala*) are smaller than in Schlechter's type, but agree in this respect with specimens in the Kew Herbarium collected in Iringa Province, Tanganyika Territory and in Nyasaland. These latter match *H. rhombocorys* in structural details. It is therefore evident that there is considerable variation in flower size in this species. It should be pointed out that Schlechter's description and the plate in Fedde Repert. Spec. Nov. Beih. 68 (1932) t. 33, Nr. 131 both give a wrong idea of the anther canals. These are described and drawn as very short, when nevertheless an examination of the type gathering shows them to be long and narrow, at least twice as long as the stigmas.

**Habenaria** (§. **Trachypetalae**) **pubipetala** *Summerhayes* sp. nov.; affinis *H. trachypetalae* Kraenzlin, a qua habitu laxiore, racemo laxifloro, floribus duplo minoribus, petalis ligulatis sursum paulo dilatatis apice breviter bilobatis, calcari spiraliter torto, antherae canalibus duplo brevioribus, rostellii lobo intermedio angustiore differt.

*Herba* terrestris, 40–70 cm. alta; caulis basi radices flexuosas villosulas emittens, erectus, teres, laxe foliatus, usque ad 7 mm. diametro. *Folia* 7–9, 1–2 infima ad vaginas redacta, intermedia elliptico-lanceolata vel elliptico-ob lanceolata, valde acuta, tota usque ad 22 cm. longa et 4 cm. lata, superiora sensim decrescentia in bracteas abeuntia. *Racemus* laxe multiflorus, 15–25 cm. longus, circiter 5 cm. diametro; bracteae lanceolatae, acuminatae, usque ad 3 cm. longae et 5 mm. latae, inferiores pedicellum et ovarium aequantes. *Flores* fere patentes, albi (fide collect.); pedicellus gracilis, 8–10 mm. longus; ovarium leviter arcuatum, circiter 1 cm. longum. *Sepalum* intermedium valde concavum, latissime ovatum, apice obtuse acuminatum, ± reflexum, 3.5–4.5 mm. longum, explanatum circiter 4.5 mm. latum; sepala lateralia deflexa, oblique semi-orbicularia, basi angustata, valde recurvata, apiculata, 10–11 mm. longa, 3.5–4 mm. lata, intus papillato-puberula. *Petala* erecta, curvatim ± ligulata, dimidio apicali ± irregulariter bilobata vel margine postica unidentata, 8 mm. longa, 3 mm. lata, dense papillato-pubescentia et ciliata, margine postica inferne cum sepalo intermedio conglutinata cucullum latum sed haud profundum formantia. *Labellum* dependens, ± deflexum, duobus trientibus apicalibus trifidum; unguis ligulatus, sursum sensim dilatatus, lateribus reflexis, 5–7.5 mm. longus, marginibus ciliolatis; lobus intermedius late linearis, obtusus, rectus, 10–12 mm. longus, 0.6–0.9 mm. latus; lobi laterales apice spiraliter recurvati, lineares, circiter 17 mm. longi, 0.5–0.6 mm. lati; calcar deflexum,

dimidio apicali inflatum obtusum, medio spiraliter tortum, 2 cm. longum, supra medium 1.6–1.8 mm. diametro. *Anthera* erecta, crassa, 2.8–3.7 mm. alta, apice apiculata recurvata, canalibus porrectis apice angustatis 2 mm. longis; staminodia ligulata, leviter retusa. *Brachia* stigmatifera porrecta, cylindrica, apice truncata et leviter incrassata, 3.5 mm. longa, pubescentia; rostellii lobus intermedius anguste triangularis, superne productus, subacutus vel breviter bidenticulatus, antheram aequans.

NYASALAND: Kondowe to Karonga, 600–1800 m., July 1896, *Whyte*; Zomba Plateau, Mulungusi Stream, 1350 m., by stream side, March 1937, *Lawrence 341* (TYPE).

The differences between this and *H. trachypetala* Kraenzlin are given in the diagnosis, while the key given above indicates how the species differs from *H. longirostris* Summerhayes.

**Habenaria** (§. **Pentaceras**) **supplicans** *Summerhayes sp. nov.*; a *H. silvatica* Schlechter floribus minoribus, petali partitione anteriore quam posteriore longiore, labelli partitionibus lateralibus quam intermedia longioribus, calcari fere duplo longiore, antherae canalibus stigmata aequantibus; a *H. tridentii* Lindley habitu altiore, foliis laxioribus latioribusque, inflorescentia longiore multiflora, floribus arcuato-recurvatis, petali partitione anteriore et labelli partitionibus lateralibus pro rata longioribus differt.

*Herba* terrestris, gracilis, 35–60 cm. alta; tubera ellipsoidea vel globoso-ovoidea, 1.5–2.5 cm. longa, 1.5–2 cm. diametro; radices flexuosae, sparse lanatae. *Caulis* erectus, teres, regulariter 10–13-foliatus. *Folia* 2–3 infima ad vaginas redacta, intermedia lanceolata, leviter acuminata vel acutissima, laminae basi  $\pm$  amplexicauli, tota usque ad 7.5 cm. longa et 1.7 cm. lata, 2–3 suprema satis minora, bracteis similia. *Inflorescentia* anguste cylindrica,

erecta, laxiuscule multiflora, 10–20 cm. longa, 3–3.5 cm. diametro; bracteae lanceolatae, acutae, usque ad 1.6 cm. longae et 4 mm. latae, floribus satis breviores. *Flores* lutescenti-virides, arcuato-recurvati, breviter pedicellati; pedicellus cum ovario arcuato 1–1.5 cm. longus. *Sepalum* intermedium fere horizontale, suborbiculari-ovatum, rotundato-obtusum, 3.5–4.5 mm. longum, 3.5–4 mm. latum, convexum, trinervium, nervis dorsaliter leviter carinatis; sepala lateralia deflexa, late semi-ovata, obtusa, 5 mm. longa, 2.3 mm. lata, trinervia. *Petala* alte bipartita; partitio posterior lineari-ligulata, subacuta, 4 mm. longa, 0.8 mm. lata, cum sepalo intermedio agglutinata cucullum latum haud profundum formans; partitio anterior reflexo-deflexa, cornu basi applanato sursum subulato similis, 6 mm. longa, basi 0.5 mm. lata. *Labellum* e parte basali indivisa 1–1.5 mm. longa tripartitum; partitio intermedia recta, lineari-ligulata, obtusa, subcarnosa, 4.5 mm. longa, 0.6–0.8 mm. lata; partitiones laterales curvato-reflexae, basi lineares superne subulatae, 6–7.5 mm. longae, basi 0.5 mm. latae; calcar curvato-dependens, superne (duobus trientibus apicalibus) leviter inflatum, apice subacutum, 1.4 cm. longum, 1–1.3 mm. diametro. *Anthera* 2 mm. alta, apice rotundata, loculis parallelis, canalibus porrectis 0.7 mm. longis stigmata aequantibus, staminodiis carnosus transverse ellipsoideis. *Brachia* stigmatifera leviter recurvatim porrecta, leviter clavata, 2 mm. longa; rostellii lobus intermedius late triangularis, obtusus, 0.5 mm. altus.

NORTHERN RHODESIA: Mwinilunga District, about 1 mile south of Matonchi Farm, in *Brachystegia*-woodland, Dec. 31st., 1937, *Milne-Redhead 3902* (TYPE). “Bracts, sepals and spur green; petals, stigmas and lip yellow-green; staminodes and rostellum whitish; anther yellow.”

ANGOLA: Moxico District, just south of Lusavo Falls, in *Brachystegia*-woodland on sand, Jan. 12th., 1938, *Milne-Redhead 4075*. “Sepals and ovary green; petals and lip yellow-green; stigmas pale green; rostellum and staminodes whitish-green; anther yellowish.”

A typical member of sect. *Pentaceras*, differing from the other species in the way in which the various characters are combined. The specific epithet is given because of the resemblance of the flowers to a number of tiny men bowed in prayer. The description is drawn up from dried and spirit material of both gatherings.

**Habenaria tenuifolia** *Summerhayes nom. nov.*

*Habenaria hymenophylla* Schlechter in Engler Bot. Jahrb. 53 (1915) 498, non Schlechter (1911).

In view of the earlier use of the epithet *hymenophylla* for an Australian species, I propose the above new name for the African plant described by Schlechter. I have now seen material of this species from southern Tanganyika Territory, the Katanga district of the Belgian Congo, Northern Rhodesia and eastern Angola.

**Habenaria njamnjamica** *Kraenzlin* in Engler Bot. Jahrb. 16 (1893) 106.

*Habenaria foliolosa* Kraenzlin l.c. 51 (1914) 372.

On examination of the type gatherings of these two species I can find no significant differences. The species has been collected in the Sudan, Kenya Colony, Belgian Congo and Northern Rhodesia.

The members of the group of species within sect. *Pentaceras*, to which this species belongs, resemble strongly certain species in sect. *Ceratopetalae*, particularly *H. stenorhynchus* Schlechter. From these they may be distinguished by the thin, not horn-like, front lobe of the petals and the gradually clavate, not capitate, stigmas, as well as by other less obvious features.

**Habenaria praestans** *Rendle* in Journ. Bot. 33 (1895) 293.

*Habenaria ctenophora* Schlechter in Engler Bot. Jahrb. 53 (1915) 500.

Examination of the type gatherings of the above two species and of about twenty other gatherings reveals no essential structural differences. There is some variation in the petals which may be either obtuse or somewhat acute at the apex, may have a sort of bulge or corner on the anticous margin in the lower part, and may be either entirely glabrous or puberulous in the lower half. The West African *H. Mannii* Hook. f. is very closely allied to *H. praestans*, differing in the much darker (almost black) colour assumed on drying and the narrower, thicker, apparently deeply V-shaped leaves, which never flatten out when dried but fold so as to show one half only. As there are practically no floral differences perhaps the two species may be better treated as geographical forms or subspecies of one widely-ranging species. On the other hand, the very hairy lip-claw and main segments and the slenderly stalked capitate or clavate-capitate staminodes distinguish both species from the species described below (*H. keniensis* Summerh.).

**Habenaria** (§. **Multipartitae**) **keniensis** *Summerhayes sp. nov.*; affinis *H. praestanti* Rendle, a qua planta siccitate pallidiore, foliis pro rata brevioribus et latioribus, floribus paulo minoribus, petalis magis pubescentibus et ciliatis, labelli segmentis primariis papillato-puberulis nec pubescentibus, antherae connectivo duplo angustiore, staminodiis sessilibus, brachiorum stigmatiferorum parte libera fere duplo longiore facile distinguenda.

*Herba* terrestris, 20–65 cm. alta; tubera ovoideo-ellipsoidea, 2.5 cm. longa, 1–1.5 cm. diametro. *Caulis* erectus, teres, glaber, usque ad inflorescentiam  $\pm$  regulariter 6–7-foliatus, basi usque ad fere 1 cm. diametro. *Folia* 1–2 infima ad vaginas redacta, cetera lanceolata usque ovata vel elliptico-ovata, acuminata, basi breviter vaginantia, usque ad 15 cm. longa et 6 cm. lata, sursum

sensim decrescentia in bracteas abeuntia, glabra, marginibus interdum papillato-ciliolatis. *Racemus* rectus, 12–22 cm. longus, 5–8 cm. diametro, subdense 10–15-florus; bracteae foliaceae, lanceolatae, acuminatae, usque ad 7 cm. longae, inferiores flores superantes, glabrae, marginibus interdum ciliolatis. *Flores* adscendentes, partim virides, partim albi; pedicellus 2–4 mm. longus; ovarium 1.5–2 cm. longum. *Sepalum* intermedium erectum, late lanceolatum, acutum vel breviter acuminatum, convexum, 1.3–1.7 cm. longum, 7–9 mm. latum; sepala lateralia deflexa, oblique oblongo-lanceolata, breviter acuminata, 1.5–2.3 cm. longa, 6–7.5 mm. lata; omnia sepala apicem versus papillato-ciliolata. *Petala* libera vel cum sepalo intermedio leviter agglutinata, lunato-ligulata, acuta, 1.2–1.8 cm. longa, medio 3.8–5 mm. lata, breviter pubescentia, ciliata. *Labellum* ex ungue ligulato circiter 5 mm. longo et 1.5–2.5 mm. lato tripartitum, in toto 1.8–2.5 cm. longum, circiter 3 cm. latum; partitio intermedia recta, lineari-ligulata, obtusa vel subacuta, 1.2–1.8 cm. longa, basi 1.5–2.2 mm. lata, supra carina mediana angusta laevi 1–1.5 mm. alta instructa; partitiones laterales divergentes, lineari-ligulatae, subcarnosae, 1.5–2 cm. longae, basi 1.2–1.6 mm. latae, margine exteriori pectinato-fimbriatae, fimbriis (vel segmentis secundariis) 6–10 subulato-filiformibus usque ad 1.4 cm. longis; unguis et segmenta primaria inferne puberula; calcar dependens, leviter sigmoideum, anguste cylindricum, apice subacutum, dimidio apicali leviter inflatum, 1.8–2.8 cm. longum, 1.8–2.4 mm. diametro. *Antherae* connectivum taeniale, ±hippocrepiforme, 4–6 mm. latum, dorso 2.5–3 mm. altum; loculi reclinati, ovoideo-ellipsoidei, 3–4.5 mm. longi; canales porrecti, tenues, 4–5.5 mm. longi; staminodia sessilia, ellipsoidea, 0.5–0.7 mm. longa. *Brachia* stigmatifera basi rostello adnata, deinde descendente, dimidio apicali curvatim adscendentia; pars libera

tota 15–16.5 mm. longa; pars receptiva 5–8.5 mm. longa, leviter incrassata, antice applanata; rostellum lobus intermedius rotundato-triangularis, brevissimus, carnosus.

KENYA COLONY: Mt. Elgon, Sosian River, 2100 m., in bush country, May 1937, *Tisdall in Tweedie 387*; Mt. Elgon, 2250 m., in grassland, May 1920, *Lindblom* (Herb. Stockholm); Mau, 2400 m., *Battiscombe 1220* (TYPE); Londiani, south of Eldama Ravine, 2370 m., July 1933, *Graham 3227*; Western foot of Aberdare Mts., near L. Olbolossat, 1950–2100 m., *Dowson 642*; Aberdare Mts., Kinangop, 2640–2670 m., in crevices between rocks close to marshy area above river, April 1938, *Chandler 2399*.

This species, which I had previously confused with *H. praestans* Rendle, differs by the characters given in the diagnosis. Perhaps the most important of these is the relatively narrow anther-connective, this being about half as wide as in *H. praestans*. The latter species has not yet been recorded in Kenya Colony where it is apparently replaced by *H. keniensis*.

**Habenaria macrantha** *Hochstetter ex A. Richard*  
Tent. Fl. Abyss. 2 (1851) 294, t. 87.

I have always found difficulty in obtaining a clear concept of this species by a cursory examination of the specimens cited by Rolfe in the Flora of Tropical Africa (vol. 7, p. 224). A careful examination, however, has led me to conclude that several different species are represented under these gatherings in the Kew Herbarium. Of these *Schimper 626* is very close to *H. keniensis* Summerh., described above, being perhaps an abnormal specimen with a much enlarged basal part of the spur. The characteristic feature of true *H. macrantha* (*Schimper 1256*) lies in the fusion of the base of the spur to the anther connective, on which fusion the lateral sepals and petals are borne, the mouth of the spur thus being hidden and not very obvious. This is well shown in Richard's plate. In addition the stigmatic surfaces are shorter and more



swollen than in *H. praestans* and *H. splendens* Rendle, while the staminodes are quite sessile. There are other differences in the petals and the lip, the middle lobe of which in *H. macrantha* has a marked longitudinal keel which is absent from both the species mentioned above. There are in the Kew Herbarium three more recently gathered specimens of *H. macrantha*, one from Mt. Elgon in Uganda, the other two from the Aberdare Mts. in Kenya Colony.

**Habenaria** (§. **Multipartitae**) **cavatibrachia** *Summerhayes* sp. nov. ; affinis *H. tricururi* A. Richard, a qua floribus duplo majoribus, calcari plus quam quintuplo longiore, rostellis lobis lateralibus apice adscendentibus incrassatis cavatis differt.

*Herba* terrestris, fere omnino glabra, 30–60 cm. alta; tubera non visa. *Caulis* erectus, teres, basi usque ad 7 mm. diametro, 5–8-foliatus. *Folia* 1–2 infima ad vaginas redacta, cetera lanceolata vel elliptico-lanceolata, breviter acuminata, basi breviter vaginantia, 6–14 cm. longa, 1.7–3.5 cm. lata, sursum sensim decrescentia. *Racemus* rectus, 5–15 cm. longus, 5–10 cm. diametro, usque ad 10-florus; bracteae foliaceae, elliptico-vel oblongo-lanceolatae, acuminatae, usque ad 5 cm. longae, inferiores flores fere aequantes. *Flores* adscendentes vel erecto-patentes, virides; pedicellus circiter 1 cm. longus; ovarium 2–2.5 cm. longum. *Sepalum* intermedium erectum, ellipticum vel elliptico-ovatum, apice  $\pm$  rotundatum et mucronatum, concavum, 1.3–2 cm. longum, 1.1–1.4 cm. latum; sepala lateralia patentia, oblique anguste vel semi-ovata, subacuta, 1.8–2.5 cm. longa, 8.5–10.5 mm. lata; omnia sepala distincte trinervia, venis transversis numerosis. *Petala* libera, erecta, curvatim oblongo-elliptica vel anguste oblongo-ovata, obtusa vel subacuta, basi margine antica rotundato-cordata, 1.2–1.7 cm. longa, 6.5–8 mm. lata,

margine antica inferne ciliata cetera glaberrima. *Label- lum* ex ungue flabellato-ligulato 7–10 mm. longo tripar- titum, totum 2–2.5 cm. longum, 1.5–2.5 cm. latum; partitio intermedia recta, lineari-ligulata, obtusa, 1.25–1.5 cm. longa, basi 2.5–3.5 mm. lata, longitudinaliter con- vexa; partitiones laterales leviter divergentes, lineari- ligulatae, carnosulae, 1.6–2.2 cm. longae, basi 1.7–2.5 mm. latae, margine exteriori pectinato-fimbriatae, fim- briis (vel segmentis secundariis) 3–8 subulato-filiformibus usque ad 1.25 cm. longis; unguis et segmentorum pri- mariorum bases inferne papillato-puberuli; calcar depen- dens, filiformi-cylindraceum, dimidio apicali modice inflatum, subacutum, 11–14 cm. longum, superne 2–3 mm. diametro. *Anthera* erecta, 4.5–6.5 mm. alta, con- nectivo angustissimo, loculis reclinato-adscendentibus 5–6 mm. longis, canalibus brevibus fere 1 mm. longis, staminodiis semiorbicularis columnae omnino adnatis. *Brachia* stigmatifera crassa, porrecta, superne leviter re- curvata, 5–6.5 cm. longa; pars receptiva obliqua, convexa, laevis, 2.5–4 mm. longa; rostellum lobus intermedius latis- sime rotundato-triangularis, lobi laterales apice erecti, valde incrassati, facie superiore leviter excavati.

KENYA COLONY: Mt. Elgon, south slopes, 2400 m., in burnt forest, June 1936, *Mainwaring K2* (TYPE); West Lembus Forest, 2580–3700 m., in grassland, July 1936, *Graham 3505*; Kedowa, 2190 m., June 1933, *Graham 3225*.

ABYSSINIA: Arussi Plateau, Oct. 1908, *Drake-Brockman 203*.

Evidently a close ally of the Abyssinian *H. tricruris* A. Rich., the characteristic feature of both species being the very narrow anther connective, the two loculi being almost contiguous. From the other characters, however, the species seem to be placed naturally in sect. *Multipar- titae*. The specific epithet of the new species is given in allusion to the hollowed-out apices of the rostellum arms, the viscidia of the pollinia lying in these cavities. The

species possesses much the longest spur of any of the African members of the section.

**Habenaria** (§. **Diphyllae**) **decurvirostris** *Summerhayes* sp. nov.; affinis *H. calvae* Rolfe, a qua folio singulo, inflorescentia latiore et laxiore, floribus paulo minoribus, petali partitione antica decurvata quam postica fere duplo longiore, calcari apice tantum inflato, rostellii lobis lateralibus leviter decurvatis facile distinguenda.

*Herba* terrestris, 20–30 cm. alta; tubera globosa vel ellipsoidea, 2 cm. longa, 1.5–2 cm. diametro, breviter tomentosa. *Folium* singulum, basale, solo adpressum, reniformi-orbiculare, apice cuspidato-acuminatum, basi cordatum,  $\pm$  amplexicaule, 2.5–4.5 cm. longum, 2–4.5 cm. latum, carnosum, sordide viride. *Scapus* erectus, teres, cataphyllis numerosis lanceolato-linearibus acutis adscendentibus luteo-viridibus usque ad 2 cm. longis instructus; racemus 11–16 cm. longus, 3–4 cm. diametro, laxiuscule vel densiuscule multiflorus; bracteae cataphyllis similes, floribus breviores. *Flores* erecto-patentes, virides; pedicellus gracilis, 3–6 mm. longus; ovarium leviter arcuatum, 8–11 mm. longum. *Sepalum* intermedium erectum, ovatum, concavum, cucullato-obtusum, 3.2–3.5 mm. longum, circiter 2.5 mm. latum; sepala lateralia deflexa, oblique et late semi-obovata, acuta, 5.5 mm. longa, 3–3.4 mm. lata, trinervia,  $\pm$  revoluta; omnia sepala viridia. *Petala* bipartita, luteo-viridia; partitio postica erecta, lanceolato-ligulata, acuta, 3.5 mm. longa, 0.7 mm. lata, sepalo intermedio adhaerens et cum eo cucullum latum formans; partitio antica incurvatim descendens, linearis, obtusa, crassiuscula, 5.5–6.5 mm. longa, 0.5–0.8 mm. lata, dimidio basali labello adnata. *Labellum* trientibus duobus distalibus trilobatum, luteo-viride, dependens, subcarnosum; lobus intermedius subspathulato-ligulatus, apice rotundatus vel obtusus, 4.5–5.5 mm.

longus, 1–1.3 mm. latus, marginibus inferne leviter recurvatis; lobi laterales leviter divergentes, ligulati vel oblanceolato-ligulati, apice rotundati vel fere truncati, 4.5–5 mm. longi, 0.8–1.2 mm. lati; calcar incurvatim dependens, inferne anguste cylindraceum, apice tantum inflatum, obtusum, 9–10 mm. longum. *Columna* 3 mm. alta, pallide viridis; anthera erecta, loculis parallelis 2 mm. longis, canalibus (et rostellis lobis lateralibus) leviter decurvatim patentibus 1.5 mm. longis, staminodiis lenticulari-ellipsoideis 0.8–1 mm. longis; brachia stigmatifera valde decurvata, labello adpressa, lingulata, complanata, 2–2.5 mm. longa; rostellis lobus intermedius obtuse triangularis.

NORTHERN RHODESIA: Mwinilunga District, Dobeka Plain, one-half mile southwest of Dobeka Bridge, on sandy ground in open near edge of *Cryptosepalum*-woodland, Dec. 14th., 1937, *Milne-Redhead 3664* (TYPE); plain north-east of Dobeka Bridge, on sandy ground in open, Dec. 30th., 1937, *Milne-Redhead 3664A*.

A rather striking little species characterised by the single basal leaf, the open inflorescence, the front petal-lobe directed downwards and adnate to the lip in the lower part, and by the shortly stalked anther in which the canals, instead of being porrect or curved upwards, are gently curved downwards.

**Habenaria** (§. **Diphyllae**) **unifoliata** *Summerhayes* *sp. nov.*; affinis *H. lithophilae* Schlechter, a qua folio singulo, floribus paulo minoribus, petali partitione antica et labelli partitionibus lateralibus pro rata longioribus, calcari paulo brevioribus, antherae canalibus longioribus differt.

*Herba* terrestris, 35–45 cm. alta; tubera globosa vel ellipsoidea, circiter 2 cm. longa, 1.5–2 cm. diametro, breviter tomentosa. *Folium* singulum, basale, solo adpressum, suborbiculare, latissime et obtusissime apiculatum, supra basin profunde cordatum, basi ipsa vaginans,

4–7 cm. longum, 5–7 cm. latum. *Scapus* erectus, teres, basi 2–3 mm. diametro, cataphyllis numerosis lanceolato-linearibus acutissimis fere erectis pallide viridibus usque ad 2.5 cm. longis instructus; racemus 15–18 cm. longus, 2.5–3 cm. diametro, laxiuscule 20–35-florus; bracteae anguste lanceolatae, acuminatae, floribus breviores. *Flores* erecto-patentes, virides; pedicellus gracilis, 3–4 mm. longus; ovarium leviter curvatum, 7–9 mm. longum. *Sepalum* intermedium erectum, concavum, ovato-ellipticum, acutum, 4.8–6.3 mm. longum, 3.5–4 mm. latum; sepala lateralia deflexa, oblique ovata vel oblongo-ovata, late apiculato-acuta, 5.7–7 mm. longa, 3–3.4 mm. lata; omnia sepala trinervia nervis dorso humiliter carinatis, marginibus superne leviter scaberulis, pallide viridia, papillosa. *Petala* fere ad basin bipartita, luteo-viridia; partitio postica erecta, leviter curvatim cultrato-ligulata, subacuta, sepalum intermedium excedens, 5.6–7.8 mm. longa, basi fere 1 mm. lata, apicem versus scaberula et leviter undulata; partitio antica basi labello et sepalo laterali adnata, deinde  $\pm$  erecta, circinatim incurvata, lineari-subulata, 9–11 mm. longa, basi 0.3–0.4 mm. lata, superne papillosa. *Labellum* profunde tripartitum; pars basalis indivisa 2 mm. longa; partitio intermedia fere recta, apice leviter recurvata, lineari-ligulata, subacuta, 6.5–9 mm. longa, basi 1–1.2 mm. lata, lateribus reflexis; partitiones laterales ab intermedia leviter divergentes, petali partitionibus anticis similes, dependentes, circinatim recurvatae, lineari-subulatae, 10–14 mm. longae, basi 0.4 mm. latae; labelum omnino papillosum; calcar dependens, cylindricum, leviter spiraliter tortum, dimidio apicali inflatum, obtusum, 12–13.5 mm. longum, 1–1.2 mm. diametro. *Anthera* erecta, circiter 3 mm. alta, loculis parallelis 2.3 mm. longis, canalibus porrectis 1.5 mm. longis, staminodiis obovato-clavatis fere 1.5 mm. longis. *Brachia* stigmatifera deorsum porrecta, apice paulo recurvata, labelli basi  $\pm$  ad-

pressa, teretia vel subteretia, 2.5–3 mm. longa; rostellilobus intermedius late rotundato-deltaeideus.

NORTHERN RHODESIA: Mwinilunga District, just north of dambo to north-east of Dobeka Bridge, in *Cryptosepalum*-woodland on sand, Dec. 30th., 1937, *Milne-Redhead 3886* (TYPE).

ANGOLA: Moxico District, just south of Lusavo Falls, in *Brachystegia-Isobertinia*-woodland on sand, Jan. 12th., 1938, *Milne-Redhead 4072*.

This, like *H. decurvirostris* Summerh., possesses only a single leaf at the base of the scape, but in floral structure more closely resembles *H. lithophila* Schlechter than *H. calva* Rolfe. From *H. decurvirostris* it can be easily recognised by the narrower inflorescence, the very long and subulate anterior petal- and lateral lip-segments and the much stouter and almost straight spur. The structure of the column also differs in a number of points, particularly the anther canals and rostellum side-lobes which in *H. decurvirostris* turn downwards but in *H. unifoliata* are slightly curved upwards.

**Habenaria** (§. **Diphyllae**) **Edgari** *Summerhayes* sp. nov.; affinis *H. Mechorwii* Reichenbach filius, sed foliis minoribus, inflorescentiis 2–4-floris nec ultra 5-floris, pedicellis plus duplo longioribus, floribus paulo majoribus, petali partitione antica et labelli partitionibus lateralibus longioribus, calcaris 15–25 cm. longo, brachiis stigmatiferis brevioribus crassioribus facile distinguenda.

*Herba* terrestris, 30–65 cm. alta, fere omnino glabra; tubera ovoidea vel ellipsoideo-fusiformia, 2.5–5 cm. longa, 1.5–2 cm. diametro, subdense tomentosa. *Folia* 2, basalia, solo adpressa, transverse elliptica vel suborbicularia, apice truncata et emarginata, apice ipso late breviterque apiculata, basi breviter vaginantia, 3–3.5 cm. longa, 3–5.5 cm. lata. *Scapus* erectus, robustus, teres, basi usque ad 8 mm. diametro, cataphyllis 8–11 foliaceis ovatis acuminatis usque ad 4.5 cm. longis et 2.5 cm. latis instructus; racemus 2–4-florus, floribus inclusis 15–25 cm. longus;

bracteae cataphyllis similes, pedicellis breviores. *Flores* fere erecti, partim pallide olivacei partim cremeo-albi; pedicellus gracilis, 3.5–6 cm. longus; ovarium leviter curvatum, 2–3 cm. longum. *Sepalum* intermedium erectum, concavum, late elliptico-lanceolatum, acuminatum, 2–2.8 cm. longum, 8–13 mm. latum; sepala lateralia deflexo-patentia, oblique semi-ovata, abrupte et curvatim acuminata, 2.5–3.2 cm. longa, 7–10.5 mm. lata; omnia sepala trinervia, nervis dorso carinatis carinis scaberulis, olivaceo-viridia. *Petala* fere ad basin bipartita, pallide cremeo-vel virescenti-alba; partitio postica erecto-patens vel fere patens, linearis, acuta, 2.5–3 cm. longa, fere 2 mm. lata, marginibus revolutis; partitio antica patens, inferne linearis, superne subulata, 5–6.5 cm. longa, basi 2 mm. lata. *Labellum* fere ad basin tripartitum; partitio intermedia dependens, e basi latiore triangulari lineari-ligulata, acuta, 3 cm. longa, medio 2 mm. lata, pallide olivaceo-viridis; partitiones laterales valde divergentes, inferne lineares, superne subulatae, 4–5 cm. longae, basi circiter 2 mm. latae, cremeo-vel virescenti-albae; calcar dependens, viride, anguste cylindricum, triente apicali modice inflatum, 15–25 cm. longum, parte apicali circiter 3 mm. diametro. *Anthera* erecta, 1.3–1.4 cm. alta, obtuse apiculata, loculis parallelis leviter arcuatis 8 mm. longis sulphureis, canalibus leviter incurvatim porrectis 6–10 mm. longis, staminodiis serpentis linguae similibus erectis 3 mm. longis, luteis. *Brachia* stigmatifera crasse cylindrica, apice cochleato-capitata, 11 mm. longa; rostellus lobus intermedius magnus, antheram antipositus et eam fere aequans, late triangularis, apice angustatus subito recurvatus, dense papillosus, fere 1 cm. longus, in lobos laterales sensim transiens.

NORTHERN RHODESIA: Mwinilunga District, on slope east of R. Kaoomba, in grassland with *Lannea*, *Sphenostylis*, etc., Dec. 22nd., 1937, *Milne-Redhead 3781* (TYPE).

BELGIAN CONGO: Katanga District, Kafuba, fairly common, Dec. 22nd., 1923, *von Hirschberg 156*.

This truly remarkable plant is evidently a near ally of *H. Mechrowii* Reichb. f., from which it differs by the characters given in the diagnosis. The most striking differences are the long pedicels which carry the flowers well away from the bracts and make the inflorescence much more open, and the very much longer spur. In general floral structure there is a strong resemblance to many members of sect. *Ceratopetalae*, e.g. *H. cirrhata* (Lindl.) Reichb.f. and *H. Laurentii* De Wildem., but the column is different while the stigmas are shorter and thicker.

The name is given in honour of the collector, Mr. Edgar Milne-Redhead, whose collection of Northern Rhodesian orchids, including nearly 250 gatherings, consisting of numerous perfectly dried specimens accompanied by flowers in liquid preservative and ample colour and habitat notes, must rank as one of the finest ever made on the African continent.

***Polystachya tessellata*** Lindley in Journ. Linn. Soc. Lond. Bot. 6 (1862) 130.

*Polystachya tricururis* Reichenbach filius in Flora 50 (1867) 118.

*Polystachya hypocrita* Reichenbach filius in Gard. Chron. new series 16 (1881) 685.

*Polystachya Buchanani* Rolfe in Bull. Misc. Inform. Kew 1893 (1894) 335.

*Polystachya similis* Bolus Ic. Orch. Austr.-Afric. 2 (1911) t. 33, partim—Rolfe in Dyer Fl. Cap. 5, sect. 3 (1912) 63, partim, non Reichenbach filius.

*Polystachya Lettowiana* Kraenzlin in Fedde Repert. Spec. Nov. Beih. 39 (1926) 54.

*Polystachya lepidantha* Kraenzlin in Bull. Misc. Inform. Kew (1926) 290.



On two previous occasions (in Hutch. & Dalz. Fl. West Trop. Afr. 2 (1936) 432 and in Bull. Misc. Inform. Kew 1939, pp. 495, 496) I have found it necessary to reduce supposedly distinct species to *P. tessellata*. Careful examination of all the African species belonging to sect. *Eupolystachya* indicates that the various species cited above are conspecific. The original specimen of Reichenbach's *P. similis* is quite distinct, the lip being devoid of the keel characteristic of *P. tessellata*, but the specimen figured by Bolus and several of those cited by him and by Rolfe do not agree with the type and are obviously *P. tessellata*.

Kraenzlin states that in *P. lepidantha* the interior of the flower is covered with scales of a type found nowhere else in the genus. In spite of very careful examination of the type specimen with a powerful binocular microscope, I have been unable to discover any sort of scales. I can only conclude that Kraenzlin's impression of silvery scales was produced by reflections from the "bullations" or "tessellations" which are so characteristic of the sepals of this species. Actually the inner surfaces are perfectly smooth with no outgrowths of any kind.

As a result of my researches *P. tessellata* is now known to occur in Upper Guinea (French Guinea to Cameroons Mountain), the islands in the Gulf of Guinea (Fernando Po, St. Thomas, Annobon), French Equatorial Africa (French Cameroons, Gabon, Oubangui-Chari), Uganda, Belgian Congo, southern Tanganyika Territory, Angola, Northern Rhodesia, Mozambique, Natal and eastern Cape Province.

The differences between *P. tessellata* on the one hand and *P. rufinula* Reichb.f. and *P. zanguebarica* Rolfe on the other are very small and are doubtfully of specific value. Unfortunately the country of origin of both these latter species is very doubtful, since, although said to come

from Zanzibar, the only certainty is that the original specimens were received from Sir John Kirk who was for many years British Consul at Zanzibar. As Kirk, however, is known to have travelled extensively we cannot be sure that the specimens came from Zanzibar or from any other place on the African mainland. In the Reichenbach herbarium there is a specimen, referred to *P. rufinula*, which was collected by Kirk in the Comoro Islands. It is curious that with the exception of a small portion of an inflorescence received from J. T. Last, no specimens belonging to the same group as either of the two species have since been collected anywhere near Zanzibar, the nearest localities being in the Livingstone Mountains near Lake Nyasa where *P. tessellata* occurs.

***Polystachya modesta*** Reichenbach filius in Flora 50 (1867) 114.

*Polystachya rigidula* Reichenbach filius l.c. 117.

*Polystachya shirensis* Reichenbach filius Otia Bot. Hamburg. (1881) 112.

*Polystachya similis* Reichenbach filius l.c. 112.

From an examination of the type specimens of the four species cited above I can discover no differences of any consequence. The species is evidently allied to *P. tessellata* Lindl. from which it may be distinguished by the less robust habit, the narrower leaves, the smaller flowers and the lip which has shorter and more obtuse lateral lobes, a thick and more or less bullate middle lobe and no keel or at most a slight thickening at the very base. Florally the species also resembles *P. golungensis* Reichb. f., but that species has thick fleshy V-shaped leaves and a pronounced hair-cushion at the base of the lip. It is probable that *P. Kindtiana* De Wildem. (in Ann. Mus. Congo, ser. 5, 1 (1903) 21) represents a very large form or specimen of *P. modesta*, there being no floral differences.

The distribution of the species is Oubangui-Chari, Uganda, Belgian Congo?, Angola, Northern Rhodesia, Nyasaland and Natal, which is similar to that of *P. tessellata* but less extensive. The species has not yet been found in the Upper Guinea area.

***Polystachya melanantha*** *Schlechter* in Engler Bot. Jahrb. 26 (1899) 341.

*Polystachya ionocharis* Kraenzlin in Engler Bot. Jahrb. 28 (1900) 371.

Judging by the determination slip on the type specimen of *P. ionocharis* in the Berlin Herbarium, Kraenzlin considered these two to be conspecific. In this monograph (Fedde Repert. Spec. Nov. Beih. 39 (1926) 82, 88, 93) published only a few years after he came to the above decision, he keeps them distinct. There are no floral differences and I cannot see the marked "heteroblasty" and "homoblasty" which Kraenzlin considers to be the decisive difference. So far as can be seen from the type specimens the inflorescence develops in both cases from the young stem before the pseudobulb is formed.

The section *Grandiflorae*, to which this species is referred by Kraenzlin, is one of the least natural of all the sections proposed by him in his monograph. As a result of examination of most of the species included in it, many of them are found to belong to other sections. *P. alpina* Lindl. is better placed in sect. *Calluniflorae*; *P. inconspicua* Rendle, *P. Doggettii* Rendle & Rolfe and *P. galeata* (Sw.) Reichb.f. (syn. *P. grandiflora* Lindl.) in sect. *Cultriformes*; *P. Goetzeana* Kraenzl., *P. Lawrenceana* Kraenzl. and *P. kilimanjari* Reichb.f. (described for the first time in the monograph by Kraenzlin and possibly synonymous with *P. Holstii* Kraenzl.) in sect. *Affines*; *P. reflexa* Lindl. in sect. *Elasticae* and *P. kermesina* Kraenzl. in sect. *Superpositae*.

The remaining species, about eight in all, form a fairly natural group, to which the name *Grandiflorae* could still be suitably applied, since in nearly all the species the flowers are large in relation to the remainder of the plant. But although Kraenzlin does not designate any type species for his sections, the sectional names in most cases are derived from the specific epithet of one of the included species (this is true of eight of the twelve sections proposed by him) and these species may reasonably be looked upon as the type species of their sections. In consideration of the fact that *P. grandiflora* has to be removed to sect. *Cultriformes*, and that the other transferences already referred to alter very considerably sect. *Grandiflorae* as conceived by Kraenzlin, it seems better to give a fresh name to the residuum. In view of the small stature of the species concerned the sectional name *Humiles* seems appropriate. A formal diagnosis is given below.

**Polystachya** sectio **Humiles** *Summerhayes* sect. nov.

Plantae humiles, usque ad 15 cm. altae. *Rhizoma* ± prorepens. *Caules* saepius basi in pseudobulbos proprios incrassati, contigui vel distantes, apice 2-3-phylli. *Racemi* simplices, uni- ad pauciflori. *Flores* pro magnitudine plantarum semper conspicui, galeati mento conspicuo, glabri vel parce pilosi, interdum siccitate nigrescentes, bracteis inconspicuis.

Species circiter 8 adhuc notae, Africae tropicae et australi indigenae.

Species typica sectionis—*P. Ottoniana* Reichb.f.

The new section, which is most closely allied to sect. *Affines*, differs in the smaller average size of the species, the marked development of pseudobulbs, the much narrower and scarcely conspicuous bracts, the much less hairy or glabrous flowers and the long and prominent mentum.

**Polystachya** (§. **Humiles**) **parva** *Summerhayes* sp. nov.; inter species sectionis floribus parvis, labelli lobo intermedio latissime ovato, lobis lateralibus antice in intermedium breviter decurrentibus lamellas altas formantibus distincta.

*Planta* epiphytica, parva, usque ad 3.5 cm. alta. *Caules* approximati, basi pseudobulbosi, ad 1 cm. alti, superne 2-3-(rarius 4-) foliati, basi radices flexuosas emittentes; pseudobulbi ovoidei, leviter compressi, usque ad 7 mm. longi et 5 mm. diametro, cataphyllis obtecti. *Folia* ± patentia vel recurvata, ligulata vel lanceolato-ligulata, apice obtusa, breviter aequaliter vel leviter inaequaliter bilobulata, usque ad 3.5 cm. longa, 2.5-7 mm. lata, inferiora valde minora interdum fere ad vaginas redacta. *Inflorescentia* erecta, folia aequans vel superans, simplex, 1-4-flora; pedunculus 7-13 mm. longus, basi vagina (vel rarius 2) circiter 5 mm. longa instructus, ut rhachis breviter pubescens; bracteae lanceolatae, acuminatae, 1.5-3 mm. longae. *Flores* patentem; pedicellus cum ovario 2-3 mm. longus, pubescens. *Sepalum* intermedium incurvatum, lanceolato-ellipticum vel anguste ellipticum, breviter acuminatum, 4 mm. longum, 1.8-2 mm. latum, concavum; sepala lateralia superne patentia, curvatim ovato-triangularia, margine postica prope basin dilatata, breviter acuminata, tota 5.5 mm. longa, basi 3.5 mm. lata, mentum apice breviter cylindricum rotundatum leviter retusum 3.5 mm. longum formantia; omnia sepala sparse pubescentia, ut petala pallide viridescenti-alba. *Petala* incurvata, oblanceolata, apiculato-acuminata, leviter obliqua, circiter 3.5 mm. longa et 1.5 mm. lata, glabra. *Labellum* superne valde recurvatum, e dimidio inferiore cuneato distincte trilobatum, totum 5.5 mm. longum; lobus intermedius latissime ovatus, apice recurvatus acutus leviter canaliculatus, fere 3 mm. longus, circiter 3.25 mm. latus, subcarnosus; lobi laterales basi-

bus parallelis vel antice convergentibus, versus margines subpatentes, parte libera triangulari acuta circiter 1 mm. longa, antice in intermedium breviter decurrentes lamellas altas formantes; discus anguste canaliculatus, callo proprio nullo; labellum pallide flavido-viride. *Columna* semi-teres, 1.5 mm. alta, ut anthera purpureo-brunnea; anthera hemisphaerica; pollinii stipes linearis, 1 mm. longus, viscidium fere orbiculare, 0.2 mm. diametro; fovea stigmatica transverse elliptica.

NORTHERN RHODESIA: Mwinilunga District, Matonchi Farm, on *Brachystegia* trees, Jan., 1938, *Milne-Redhead* 4369; also in evergreen vegetation, *R. Luao*.

The above very striking little species was described from dried specimens and numerous entire specimens in liquid preservative. It is one of the smallest species of the genus as the whole plant is only about 3 cm. high, while the flowers are smaller than usual in sect. *Humiles*. The structure of the lip is very difficult to describe. As is common in many *Polystachyas* the lip is recurved into a semicircle and cannot be flattened out. The lateral lobes have more or less parallel bases and lean outwards towards their margins at an angle of about 45° forming a V-shaped trough. In front they terminate suddenly with acute slightly connivent apices but instead of forming a simple sinus with the front lobe the inner anticous portions are decurrent for a short distance onto the extremely broad front lobe forming apparent high lamellae somewhat similar to those in *Diplacorchis*.

***Polystachya* (§. *Affines*) *praecipitis* *Summerhayes* sp. nov.**; inter species sectionis sepalis lateralibus valde obliquis, mento angusto cylindrico, labello longiuscule unguiculato distinguenda.

*Herba* epiphytica, parva, usque ad 8 cm. alta; pseudobulbi contigui, basi angustati, superne ovoidei vel el-

lipsoidei, 1–2 cm. longi, 0.5–1 cm. diametro, vaginis membranaceis obtecti, apice 2–3-phylli, radices flexuosas glabras emittentes. *Folia* anguste oblonga vel elliptico-oblonga, apice breviter bilobulata, inferne articulata, supra articulum 1.5–5 cm. longa, 5–10 mm. lata, dorso humiliter carinata. *Inflorescentia* erecta, simpliciter racemosa, usque ad 7 cm. alta, saepius folia superans; pedunculus usque ad 4.5 cm. longus, ut rhachis subdense pubescens, inferne cataphyllis tribus, medio cataphyllo singulo, omnibus scariosis  $\pm$  vaginantibus instructus; racemus 1–3 cm. longus, laxe 3–5-florus; bracteae ovatae, acuminatae, subscariosae, usque ad 4 mm. longae, floribus multo breviores. *Flores* cremei, deflexi; pedicellus brevissimus, ovario 2–4 mm. longo dense patentim albido-piloso. *Sepalum* intermedium elliptico-lanceolatum, breviter acuminatum, 7 mm. longum, 3 mm. latum; sepala lateralia valde oblique oblongo-lanceolata, apice subacuta, basi margine postico rotundato-dilatata, tota 11 mm. longa, 3 mm. lata, cum pede columnae mentum angustum cylindricum rotundatum 3–4 mm. longum formantia; omnia sepala extus pubescentia. *Petala* leviter curvatim lanceolato-oblonga, acuta, 6 mm. longa, 1.5 mm. lata, glabra. *Labellum* ex ungue longiusculo ligulato fere 4 mm. longo subhastatum, totum 11 mm. longum, 3.5–4 mm. latum; lobi laterales breves, obtusi, ab intermedio vix sejuncti; lobus intermedius acutus, 4 mm. longus, 3 mm. latus, prope apicem marginibus  $\pm$  involutis, pulvino pilorum articulorum flavidorum fere omnino obtectus; discus et unguis intus pilis sparsis patentibus praeditus. *Columna* brevis, fere teres, vix 2 mm. alta; androclinium leviter excavatum; fovea stigmatica transverse elliptica.

TANGANYIKA TERRITORY: Handeni District, Nyogi Mt., 1050 m. alt., forest margin on summit of great rocks [precipice], Sept., 1933, *Burt* 4874.

This species, which was growing with *P. isochiloides* Summerh. (see Bull. Misc. Inform. Kew 1939, p. 498), seems naturally placed in sect. *Affines* on account of the habit, inflorescence and hairy flowers. The flower is, however, much narrower than in other species and possesses a very distinct and shortly cylindrical mentum. The lip is also very characteristic, having a triangular-lanceolate or subhastate blade and narrow parallel-sided claw; the front lobe is almost entirely covered by a dense cushion of the floury articulate hairs so common in the genus.

***Polystachya fusiformis*** (*Thouars*) *Lindley* in Bot. Reg. 10 (1824) sub t. 851.

*Polystachya minutiflora* Ridley in Journ. Linn. Soc. Lond. Bot. 20 (1883) 330.

*Polystachya composita* Kraenzlin in Fedde Repert. Spec. Nov. Beih. 39 (1926) 103—Summerhayes in Hutchinson & Dalziel Fl. West Trop. Afr. 2 (1936) 429.

From careful examination of the above I am unable to discern any but individual differences, the various specimens showing a range of characters such as is to be expected from a species with such a wide geographical distribution. I have seen specimens from Fernando Po, Cameroons, Uganda, Tanganyika Territory, Belgian Congo, Northern Rhodesia and Madagascar. I do not find any segregation of character combinations justifying the retention of *P. minutiflora* as a distinct species, the characters given by Schlechter (Fedde Repert. Spec. Nov. Beih. 33 (1924) 159) showing no correlation in the various specimens examined. Kraenzlin's key character (l.c. pp. 100, 101) of presence or absence of a mentum for separating *P. composita* from *P. fusiformis* appears to me to be entirely imaginary. In spite of the somewhat



different appearance of the plant figured by Thouars (Fl. Iles Austr. Afr. t. 86: 1822) the Réunion plant does not appear to differ essentially from those found elsewhere either in habit or in floral structure.

**Polystachya cultriformis** (*Thouars*) *Sprengel* Syst. Veg. 3 (1826) 742.

*Polystachya appendiculata* Kraenzlin in Notizbl. Bot. Gart. Berl. 3 (1903) 238, probably.

*Polystachya Lujae* De Wildeman in Plant. Nov. Hort. Then. (1904) t. 18.

Careful examination of the description of *P. appendiculata* Kraenzl., the type specimen of which could not be found at Berlin, taken in conjunction with numerous specimens referred to *P. cultriformis* (Thou.) Spreng. in the Kew Herbarium, has led me to the conclusion that these two are probably conspecific. The only outstanding feature in the description of Kraenzlin's species, namely, the appendix at the base of the dorsal sepal, has been found on a number of specimens from the Gabon, Uganda, and even Madagascar (*Perrier de la Bathie 16062*). This appendix, however, is developed to different extents, being sometimes over 1 mm. long while in other cases it is just a small knob. I have been unable to correlate its presence or absence with any other of the variations of the widespread and variable *P. cultriformis*. *P. Lujae* De Wildem., though placed apart from *P. cultriformis* by Kraenzlin in his monograph, appears to be indistinguishable from the latter, particularly the Mascarene Islands specimens.

**Polystachya gracilenta** *Kraenzlin* in Engler Bot. Jahrb. 19 (1894) 251.

*Polystachya purpureo-alba* Kraenzlin l.c. 43 (1909) 337.

In spite of the alleged differences between the above

species set out by Kraenzlin in his key to sect. *Cultriformes* (Fedde Repert. Spec. Nov. Beih. 39 (1926) 106), I can see none of any importance on examining the two type specimens. It is evident from the labels that the two gatherings were made in the same region and altitudinal zone.

***Polystachya bicarinata*** Rendle in Journ. Linn. Soc. Lond. Bot. 38 (1908) 236.

*Polystachya eusepala* Kraenzlin in Wiss. Ergebn. Deutsch. Zentr.-Afr.-Exped. 1907-1908, 2 (1910) 79, t. IX, fig. C.

Dissections of flowers from the type specimens of the above "species" show them to be almost identical. There appear to be no differences, either floral or vegetative, warranting their separation.

***Polystachya galeata*** (Swartz) Reichenbach filius in Walpers Ann. 6 (1863) 637.

*Polystachya Gilletii* De Wildeman Not. Pl. Util. Congo (1904) 313.

The type gathering of *P. Gilletii* De Wildem. agrees well with *P. galeata* in general features and floral structure. The leaves are somewhat wider, the flowers are a little smaller, while the petals are broader. Judging from other species in this section and elsewhere in the genus, none of these differences is of specific value. It is interesting to note that Kraenzlin makes no comparison between these species in his monograph since he places *P. galeata* in his sect. *Grandiflorae* and *P. Gilletii* in sect. *Cultriformes*. The latter section is the correct position.

***Polystachya*** (§. *Cultriformes*) ***virginia*** Summerhayes sp. nov.; a *P. Doggettii* Rendle & Rolfe mento longiore, a *P. galeata* (Sw.) Reichb.f. planta siccitate haud nigrescente, labello vix unguiculato, ab utraque floribus candidis differt.

*Planta* epiphytica, usque ad 40 cm. alta, fere omnino glabra. *Caules* (vel pseudobulbi) contigui, erecti, anguste cylindrici vel anguste fusiformes, ancipites, usque ad 15 cm. longi, 0.5–1 cm. diametro, apice monophylli, basi cataphyllis lanceolatis usque ad 10 cm. longis vaginati, radices flexuosas emittentes. *Folium* oblongo-ligulatum vel elliptico-ligulatum, apice brevissime aequaliter bilobulatum vel apiculatum, 10–27 cm. longum, 0.9–3.6 cm. latum, basi breviter conduplicatum. *Inflorescentia* folio multo brevior, usque ad 10-flora; pedunculus 2.5–8 cm. longus, teres, vagina lanceolata submembranacea omnino vel fere omnino circumdatus; racemus 1–4 cm. longus; bracteae parvae, triangulares, acuminatae, usque ad 2.5 mm. longae. *Flores* adscendentes, candidi, pulchri; pedicellus 3–5 mm. longus; ovarium 10–12 mm. longum. *Sepalum* intermedium lanceolatum, acutum vel subacutum, 8.5–10.5 mm. longum, 4.5–5 mm. latum; sepala lateralia oblique triangularia, breviter acuminata, margine postico (superiore) 15–17.5 mm. longo, pedi columnae adnata mentum galeiforme 8.5–11 mm. longum formantia; omnia sepala 5–7-nervia. *Petala* oblique oblanceolato-oblonga, apice subacuta, 8–10 mm. longa, 3–4 mm. lata, 3–5-nervia. *Labellum* fere sessile, valde curvatum, e basi latiuscula ambitu obovatum, dimidio apicali  $\neq$  distincte trilobatum, 13–14 mm. longum, 8.5–10 mm. latum; lobus intermedius triangularis, leviter acuminatus, 4.5–5 mm. longus, 4–5 mm. latus; lobi laterales rotundati vel obtusi; discus callo quadrato antice altiore instructus. *Columna* crassa, obtusa, 3 mm. longa, 3.6 mm. diametro, androclinio leviter excavato.

UGANDA: Kigezi, Impenetrable Forest, 2100 m. alt., Sept. 1936, Eggeling 3308; Toro, Bwamba Pass, 2400 m. alt., August 1937, Eggeling 3361 (TYPE).

A very striking species with handsome pure white flowers. The nearest relative is apparently *P. Doggettii*

Rendle & Rolfe, which occurs on Mt. Ruwenzori but has pale yellow flowers with a shorter mentum.

***Polystachya Doggettii*** Rendle & Rolfe in Journ. Linn. Soc. Lond. Bot. 38 (1908) 235.

*Polystachya Schinziana* Kraenzlin in Fedde Repert. Spec. Nov. Beih. 39 (1926) 119.

Curiously enough *Kassner 3127*, which is cited on page 119 of Kraenzlin's monograph as the basis of his new species, *P. Schinziana*, is also cited on page 82 under *P. Doggettii* Rendle & Rolfe. Like *P. galeata* (Sw.) Reichb. f., the present species is placed correctly in sect. *Cultriformes*, being closely allied to its West African congener. It differs in the smaller flowers, the shorter mentum and the differently shaped lip, the claw being short and broad, the lateral lobes rounded and not clearly separated from the middle lobe, while the middle lobe itself has a prominent recurved acute apex. The lip, as remarked by Kraenzlin, is very difficult to flatten out, assuming different outlines according to the way it is flattened.

***Polystachya inconspicua*** Rendle in Journ. Linn. Soc. Lond. Bot. 37 (1905) 218.

*Polystachya ashantensis* Kraenzlin in Bull. Misc. Inform. Kew (1926) 294.

On examination it appears that the type specimens of the above possess no differences of specific importance, the main differences being those of size, both vegetatively and florally. The type of *P. inconspicua* seems to be a very small specimen bearing exceptionally large flowers. Mr. W. J. Eggeling, however, has collected many specimens in Uganda showing all intermediates between *Bagshawe 425* and the Gold Coast material as regards vegetative characters; these specimens also help partially to bridge the differences in flower size. The species evi-

dently belongs to sect. *Cultriformes* being a close relative to *P. tenuissima* Kraenzl.

**Polystachya** (§. **Cultriformes**) **tenella** *Summerhayes sp. nov.*; affinis *P. Mildbraedii* Kraenzl. et *P. angustifoliae* Summerh., ab illa floribus multo minoribus, ab hac labello latiore, ab utraque habitu et praesertim pedunculo graciliore, floribus magis congestis, labello ex ungue angusto subcordato-triangulari fere integro distinguitur.

*Herba* epiphytica, 25–36 cm. alta; caules gracillimi, laxe caespitosi, fere erecti, teretes, leviter longitudinaliter striati, 5–15 cm. longi, 0.5–2 mm. diametro, apice monophylli, inferne cataphyllis tubulosis  $\pm$  arcte tunicati, radices flexuosas emittentes. *Folium* erectum, lineare vel ligulato-lineare, obtusum, leviter bilobulatum, 10–20 cm. longum, 2–5.5 mm. latum. *Inflorescentia* gracillima, folia fere aequans vel superans, simpliciter racemosa vel ramulis paucis instructa; pedunculus 10–18 cm. longus, basi fere 1 mm. diametro, basi vagina arcta tunicatus; pars florifera 1–5 cm. longa, usque ad 15-flora, ramulis suberectis usque ad 1.5 cm. longis; rhachis flexuosa; bracteae 1–2 mm. distantes, ancipites, e basi lata acuminatae, 1–2 mm. longae. *Flores* erecto-patentes, partim lutei partim purpurei; pedicellus 1.5–2 mm. longus; ovarium 1.5 mm. longum. *Sepalum* intermedium oblongo-ellipticum, obtusum vel rotundatum, 2.8–3.5 mm. longum, 1.8–2 mm. latum, trinervium; sepala lateralia oblique triangularia, subacuta, 3.5–4 mm. longa, cum pede columnae mentum obtusum 2.5–3 mm. longum formantia. *Petala* anguste ligulata, subacuta, 2.6–3.2 mm. longa, 0.4–0.5 mm. lata, uninervia. *Labellum* ex ungue angusto leviter concavo 0.7–1 mm. longo subcordato-triangulari, fere integrum, lobis lateralibus vix distinctis rotundatis, apice obtusum, totum 3.5–4.2 mm. longum, 2.5–3 mm. latum, ecallo-

sum. *Columna* semiteres, 2.5 mm. alta, androclinio leviter excavato, pede 3 mm. longo; anthera transverse elliptica, convexa, apice breviter apiculata.

BELGIAN CONGO: Virunga Mts., Namlagira, eastern slope, 2250 m. alt., common in forest, Jan. 1931, *Burtl 3132* (TYPE).

UGANDA: Kigezi, Sept. 1936, *Eggeling 3262*.

A further species belonging to the group within sect. *Cultriformes* possessing long slender stem-like pseudobulbs and narrow leaves. The flowers are grouped in short 5-10-flowered racemes of which there may be only one or several close together. Many of these branch racemes fail to develop, being represented by buds in the axils of the lower bracts.

**Polystachya** (§. **Cultriformes**) **subdiphylla** *Summerhayes sp. nov.*; ab omnibus aliis speciebus sectionis pseudobulbis brevibus ampullaceo-conicis, cataphyllo supremo foliaceo fere folium secundum formanti, folio anguste oblanceolato 2-5 cm. supra pseudobulbum disarticulato, racemo brevissimo paucifloro differt.

*Herba* terrestris, 20-35 cm. alta, fere omnino glabra; radices flexuosae, 1-2 mm. diametro; pseudobulbi contigui vel fere contigui, basi sympodium breve repens formantes, superne erecti, ampullaceo-conici vel anguste ovoideo-conici, 2-4 cm. alti, 5-10 mm. diametro, apice monophylli, cataphyllis 2-3 suprema foliacea apice triapiculata pseudobulbum valde superantia et folii basin arcte vaginantia vestiti. *Folium* anguste oblanceolatum vel ligulato-oblanceolatum, apice acutum vel subacutum, basi sensim angustatum, 2-5 cm. supra apicem pseudobulbi articulatum, supra articulum 15-25 cm. longum, 11-17 mm. latum. *Inflorescentia* folio brevior; pedunculus teres, laevis, 8-16 cm. longus, ebracteatus; racemus brevissimus, fere capitatus, rachide 1-2 cm. longa, usque ad 4-florus. *Flores* adscendentes, albi, labello rubro- et

flavo-signato; pedicellus cum ovario 1–1.6 cm. longus. *Sepalum* intermedium lanceolatum, acuminatum, circiter 1.5 cm. longum et 5.5 mm. latum, 5-nervium; sepala lateralia recurvatim patentia, oblique ovato-triangularia, breviter caudato-acuminata, circiter 1.5 cm. longa, 9 mm. lata, basi pedi columnae adnata mentum 7 mm. longum formantia. *Petala* oblanceolata, breviter acuminata, 1.25 cm. longa, 4–4.5 mm. lata. *Labellum* superne valde recurvatum, vix unguiculatum, trilobatum, 1–1.2 cm. longum, 1.1–1.2 cm. latum; lobus intermedius transverse ellipticus, apice dorsaliter longe apiculatus, 5–6 mm. longus, 6.5–7 mm. latus, pilis flavidis vestitus; lobi laterales  $\pm$  erecti, incurvatim subovati, rotundati, parte libera 3–4 mm. longa et 4–5 mm. lata, rubro-striati; discus callo humili ligulato apice obtuse triangulari instructus. *Columna* brevissima; anthera galeiformis, crista integra laevi coronata.

TANGANYIKA TERRITORY: Uluguru Mts., Morogoro, Kinolo Road, 1890 m. alt., in dwarf "mtani" forest, April 1935, *Bruce 982*.

A very striking species which I have placed in sect. *Cultriformes* on account of the one-leaved pseudobulbs, but which seems to have no close allies there. The flowers resemble more closely those of sect. *Affines* but only the lip is hairy. Interesting features are the very long upper sheath which is wrapped round the base of the leaf and seems almost to be a further half-developed leaf, and the articulation of the leaf itself which is at least 2 cm. above the apex of the pseudobulb. On the falling of the blade, the base, which is 2–5 cm. long, remains attached to the pseudobulb. In other species of sect. *Cultriformes* this persistent leaf-base is never more than about 5 mm. long and is usually much shorter.

**Polystachya** (§. **Cultriformes**) **aconitiflora** *Summerhayes* sp. nov.; affinis *P. caespitiflora* Kraenzl., a qua

caulibus gracilioribus, foliis angustioribus, labelli lobis lateralibus quam intermedio multo minoribus, lobo intermedio subquadrato rotundato disco calloso distinguitur.

*Planta* epiphytica, parva, usque ad 12 cm. alta. *Caules* (vel pseudobulbi) caespitosi, cylindrici, graciles, siccitate longitudinaliter sulcati, usque ad 6 cm. longi, 0.5–1 mm. diametro, inferne vaginis 2–3 tubulosis subarcte circumdati, basi radices flexuosas glabras emittentes, apice monophylli. *Folium* lineari-ligulatum, apice rotundatum, basi leviter angustatum, 2.5–6 cm. longum, 2–4 mm. latum. *Inflorescentia* quam folium brevior vel id superans; pedunculus gracilis, 1.5–5 cm. longus, basi vagina arcta circumdatus; racemus abortu fere semper uniflorus, 5–10 mm. longus, bracteis 3–6 distichis lateraliter compressis acuminato-ovatis usque ad 2.5 mm. longis. *Flores* suberecti, galeiformes, purpurei vel partim purpurei partim albi; pedicellus cum ovario 3–5 mm. longus. *Sepalum* intermedium late elliptico-lanceolatum, acuminato-apiculatum, 4 mm. longum, 2 mm. latum, subquinquenervium; sepala lateralia oblique ovato-triangularia, apiculata, margine postico 5.7–7 mm. longa, basi cum pede columnae mentum subobtusum 4–5 mm. longum formantia. *Petala* oblanceolata, acuta, 3–3.7 mm. longa, 1.1–1.5 mm. lata, uninervia. *Labellum* basi cuneatum, medio vel supra medium trilobatum, 5.5–6.5 mm. longum, 4–4.6 mm. latum; lobus intermedius subquadratus, apice rotundatus vel obtusus, incrassatus, 1.7–2.4 mm. longus, 2.3–2.6 mm. latus; lobi laterales rotundati usque subacuti, quam intermedius minores, brevissimi, circiter 1 mm. lati; discus callo elliptico-quadrato humili obtuso instructus. *Columna* semi-teres, truncata, circiter 1.5 mm. longa, androclinio leviter excavato, fovea stigmatica ambitu semi-orbiculari; anthera et pollinia non visa.

BELGIAN CONGO: Lava Plain, north of Lake Kivu, Aug. 1908, *Kassner 3236* (TYPE).



UGANDA: Kigezi, Sept. 1936, *Eggeling* 3237; Kigezi, Nyebeya, Impenetrable Forest, Oct. 1940, *Eggeling* 4142.

A rather charming little species intermediate vegetatively between *P. caespitifica* Kraenzl. and *P. vulcanica* Kraenzl., but differing from the former in the lip shape and the colour of the flowers and from the latter in the broader leaves and considerably smaller flowers.

**Polystachya** (§. **Cultriformes**) **latilabris** *Summerhayes* sp. nov.; a *P. caespitifica* Kraenzl. foliis majoribus, inflorescentiis plurifloris, floribus majoribus et colore diverso differt.

*Herba* epiphytica, usque ad 15 cm. alta, omnino glabra; caules (vel pseudobulbi) erecti, contigui, 2.5–5.6 cm. longi, inferne 1–2 mm. diametro, inferne vaginis duabus tubulosis acutis circumdati, basi radices flexuosas emittentes, apice monophylli. *Folium* elliptico-ligulatum, apice brevissime rotundato-bilobulatum, inferne angustatum, basi per 6–7 mm. longum pedunculum arcte vaginans, apice vaginae articulatum, totum 5–9.5 cm. longum, 5–9 mm. latum, crassiusculum. *Inflorescentia* folio brevior, erecta; pedunculus basi anguste superne magis anceps, 3.5–5 cm. longus; racemus brevis, usque ad 6-florus, 1.5–2 cm. longus; bracteae fere distichae, acuminato-triangularis, 1–2 mm. longae. *Flores* patentes; pedicellus (ovario incluso) circiter 5 mm. longus. *Sepalum* intermedium ovato-ellipticum, apiculatum, 5.3–6.2 mm. longum, 3.5–3.8 mm. latum, tri- vel subquinenervium; sepala lateralia oblique ovata, breviter apiculato-acuta, margine postico 6.6–7.2 mm. longo, cum pede columnae mentum subacutum 4.5 mm. longum formantia. *Petala* spathulato-obovata, apice apiculata vel breviter acuminata, 5.3 mm. longa, 2.6–3.6 mm. lata. Labellum breviter unguiculatum, ambitu transverse ellipticum, 5.3–5.6 mm. longum, 10–10.2 mm. latum, triente apicali fere

aequaliter trilobatum; lobus intermedius triangulari-semiorbicularis, apiculatus, 2 mm. longus, 3.6–4 mm. latus; lobi laterales erecti, oblique et incurvatim subquadrato-ovati, 2 mm. longi, 3–3.5 mm. lati; discus ecallosus. *Columna* subteres, apice truncata, 1.6–2 mm. alta, 1.5–2 mm. diametro; androclinium satis excavatum, anthera fere hemisphaerica antice subacuta; fovea stigmatica transverse elliptica.

KENYA COLONY: Kericho, 1950 m. alt., March 1933, *Gray 90*, cult. & comm. May 2nd., 1939 (TYPE). "Flowers white with orchid-coloured throat and orange line in centre of labellum; anther orchid-coloured." Tusu, Eastern Aberdare Mts., in forest, April 1935, *Napier 3652*. "Flowers creamy-white with mauve 'lip' and a spot of orange on yellow on upper lip."

This pretty little species is apparently closely allied to *P. caespitifica* Kraenzl. which, however, is said to have "intense yellow" flowers, and also differs by the characters given in the diagnosis. The most striking feature of *P. latilabris* is the very broad lip with large erect side lobes which, although equalling the middle lobe in length, are somewhat greater in area. Unfortunately the lip of the only flower on the type sheet of *P. caespitifica* has been lost, and Kraenzlin's description is not adequate to convey a true picture of the structure of this important floral organ. Judging by the description it may well resemble that in *P. latilabris*, being ecallose in each case. Further collections of *P. caespitifica* from the original locality are much desired, since it is the first described species of the small group to which it belongs.

***Polystachya dendrobiiflora*** *Reichenbach filius*  
Otia Bot. Hamburg. (1881) 76.

*Polystachya longiscapa* Summerhayes in Bull. Misc. Inform. Kew (1934) 211.

Further consideration makes it evident that these two are conspecific. It should be noted that the inflorescence

is often branched, the branches being up to 7 cm. long; some or all of these branches may, however, be arrested in the bud-stage but are always discernible. This non-development of lateral inflorescence-branches is a common feature in the genus and has been the cause of some confusion in the past (see Bull. Misc. Inform. Kew 1935, p. 197).